

### A GROWING CONCERN

Unintentional falls are the leading cause of fatal and nonfatal injury in the U.S. and Indiana among older adults. Hospital costs associated with injuries sustained by falls account for a substantial share of health care dollars spent on injury-related care.

In 2016, 394 Indiana residents ages 65 and older died due to an unintentional fall and over 58,900 fall injuries were treated at hospitals and emergency departments (Figure 1).

This report provides recent data on unintentional fall injuries and deaths among Indiana residents ages 65 and older. It includes information about groups with the highest rates, associated costs, and current prevention strategies and activities in Indiana.

### QUICK FACTS



Unintentional falls are the leading cause of death for older adults in Indiana. Indiana residents 65 and older account for **82.1% of all fall deaths** and 71.8% of nonfatal fall hospitalizations in Indiana.



Falls are the **leading cause of traumatic brain injury (TBI)** in Indiana residents ages 65 and older, accounting for 53.0% of TBI deaths and 47.1% of TBI hospitalizations.



**Projected lifetime costs** associated with fall injuries in 2013 among Indiana residents ages 65 and older are estimated to be **\$740 million**.



**Each week, there are 879.8** emergency department visits among residents ages 65 and older, **240.3** hospitalizations, **and 7.6 deaths due to fall injuries** in Indiana.



In 2016, 26.4% of fall deaths among this age group **occurred due to bumping against an object** while 8.6% occurred due to falling off stairs or steps. This information was unspecified or not known for 54.8% of fall deaths.

**FIGURE 1.** Burden of Fall Injuries among Residents Ages 65 and Older—Indiana, 2016

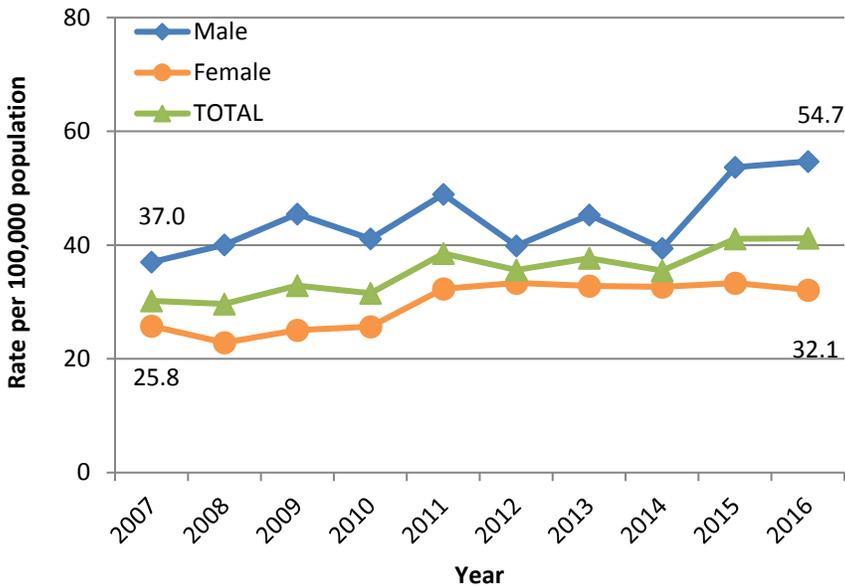


# Indiana

## Special Emphasis Report: Fall Injuries among Older Adults 2016

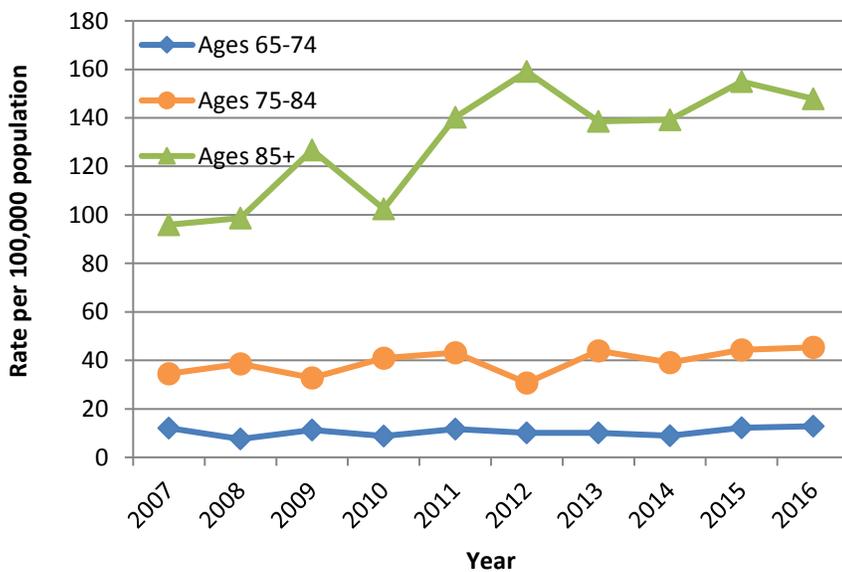
### FALL DEATHS

**FIGURE 2.** Age-adjusted Rate of Fall Deaths by Sex, Ages 65 and Older—Indiana, 2007-2016



- From 2007 to 2016, the age-adjusted rate of fall deaths increased from 30.2 per 100,000 in 2007 to 41.2 per 100,000 in 2016.
- Fall death rates increased among both males and females during this time period.
- In 2016, the fall death rate in males was approximately 70% higher than in females.

**FIGURE 3.** Age-specific Rate of Fall Deaths by Age Group, Ages 65 and Older—Indiana, 2007-2016



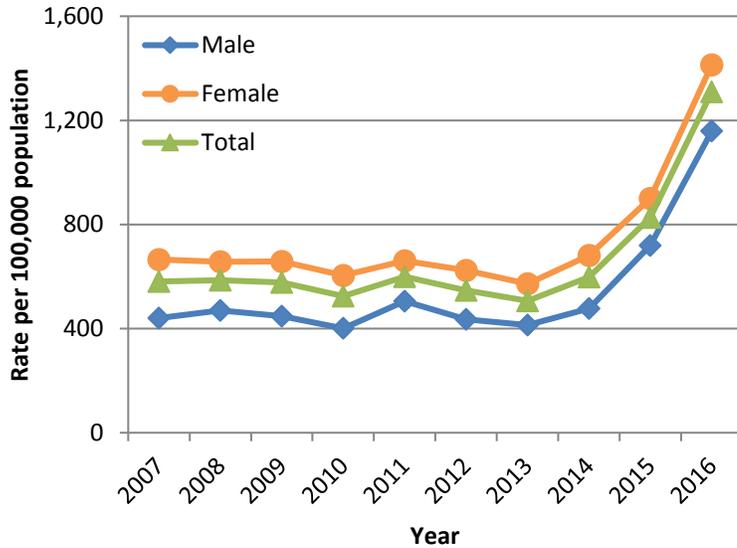
- From 2007 to 2016, all death rates increased among all three age groups.
- The highest increase in rate was among persons ages 85 and older.
- Rates for persons ages 85 and older increased from 95.9 per 100,000 in 2007 to 147.9 per 100,000 in 2016.

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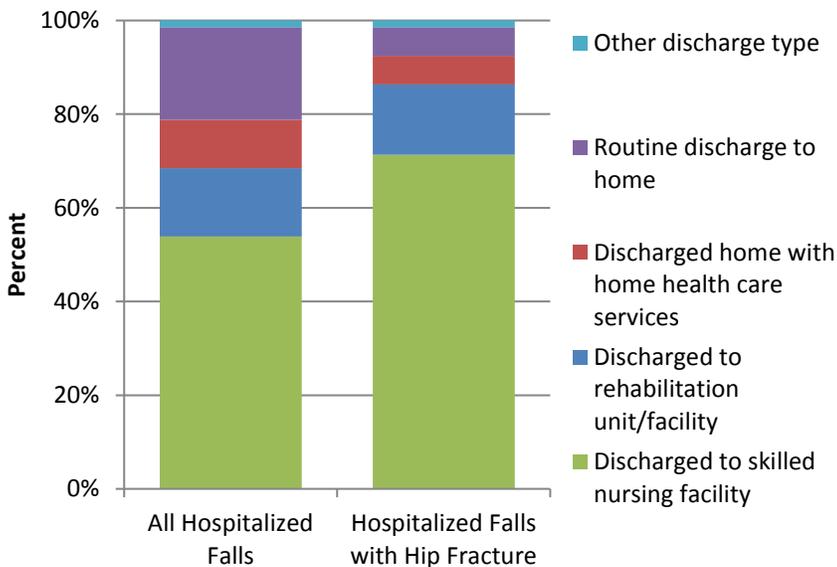
### NONFATAL FALL HOSPITALIZATIONS

**FIGURE 4.** Age-adjusted Rate of Nonfatal Fall Hospitalizations by Sex, Ages 65 and Older—Indiana, 2007-2016



- Nonfatal fall hospitalizations have increased rapidly since 2007. From 2007 through 2014, the rates remained relatively the same. But in 2015 and 2016, there was an exponential increase due to the shift from ICD-9-CM to ICD-10-CM codes for unintentional falls.
- In 2016, rates among females were approximately 1.2 times that of males.

**FIGURE 5.** Percent of Nonfatal Fall Hospitalizations by Discharge Status, Ages 65 and Older—Indiana, 2016



- 53.9% of all fall hospitalizations were discharged to a skilled nursing facility, 19.8% were routinely discharged home, and 14.6% were discharged to rehabilitation units or facilities.<sup>1</sup>
- Among those with hip fractures, 71.4% were discharged to a skilled nursing facility and 15.1% were discharged to rehabilitation units or facilities.<sup>1</sup>

<sup>1</sup>Rehabilitation unit/facility discharge includes inpatient hospital rehab units as well as other facilities and institutions.

<sup>2</sup>Other discharge type category includes other types of nursing facilities and patients who left against medical advice.

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### DEMOGRAPHIC DATA

**TABLE 1.** Number and Rate of Fall Deaths and Nonfatal Fall Hospitalizations and Emergency Department (ED) Visits, Ages 65 and Older—Indiana, 2016

	Fall Deaths		Nonfatal Fall Hospitalizations and Emergency Department Visits			
	Number of Deaths	Death Rate per 100,000 <sup>2</sup>	Number of Hospitalizations	Nonfatal Hospitalization Rate per 100,000 <sup>2</sup>	Number of ED Visits	Nonfatal ED Visit Rate per 100,000 <sup>2</sup>
<b>TOTAL</b>	<b>394</b>	<b>41.2</b>	<b>12,497</b>	<b>1,309.2</b>	<b>45,747</b>	<b>4,744.8</b>
<b>Sex</b>						
Male	203	54.7	4,436	1,158.6	14,936	3,778.6
Female	191	32.1	8,061	1,413.6	30,811	5,476.4
<b>Age Group</b>						
Ages 65-74	74	12.8	3,473	602.6	17,077	2,962.8
Ages 75-84	130	45.3	4,440	1,548.6	15,466	5,394.2
Ages 85+	190	147.9	4,584	3,568.2	13,204	10,277.9

- Males had a higher rate of fall deaths than females (54.7 per 100,000 and 32.1 per 100,000, respectively).
- Females had higher rates for nonfatal hospitalizations and ED visits.
- Persons ages 85 and older had the highest rates of fatal and nonfatal fall injuries. This age group had 11.5 times the rate of deaths than those aged 65-74.

<sup>2</sup>Rates are age-adjusted except for rates by age group.

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### PROJECTED LIFETIME COSTS

Lifetime costs<sup>4</sup> associated with unintentional fall injuries in 2013 among Indiana residents ages 65 and older are estimated to be over \$740 million. Most of these costs were associated with injuries requiring hospitalization.

	Number of Injuries	Medical Cost	Work Loss Cost	Combined Cost
Deaths	346	\$8,307,000	\$37,502,000	<b>\$45,809,000</b>
Hospitalizations	7,615	\$308,408,000	\$224,676,000	<b>\$533,084,000</b>
ED Visits	35,145	\$112,564,000	\$48,591,000	<b>\$161,156,000</b>
TOTAL	43,106	\$429,279,000	\$310,769,000	<b>\$740,049,000</b>

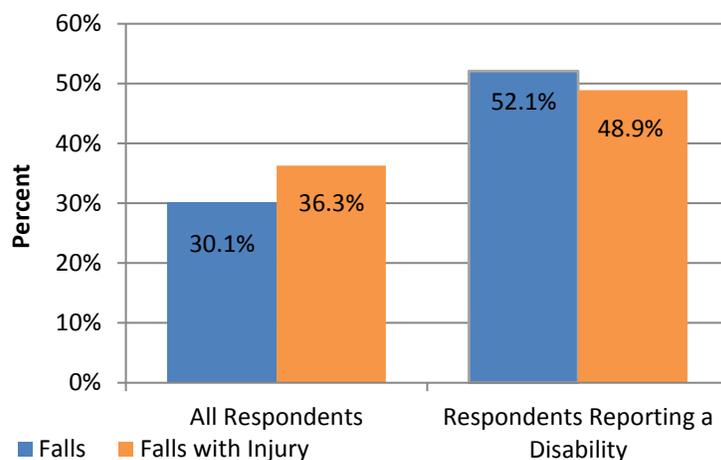
### SURVEY DATA

- The Behavioral Risk Factor Surveillance Survey (BRFSS) is a statewide phone survey of community dwelling (i.e., noninstitutionalized) Indiana adults. It provides self-reported data on a variety of topics, including falls, fall-related injuries, and medical conditions.
- In 2016, an estimated 30.1% of Indiana adults ages 65 and older reported having fallen and 36.3% reported a fall-related injury in the past 12 months.
- Older Indiana adults who reported the following conditions were significantly *more likely*<sup>5</sup> to report falls or fall-related injuries in the past 12 months:

- poor mental health/depression
- diabetes
- stroke
- no exercise
- disability<sup>6</sup>
- chronic obstructive pulmonary disease (COPD)
- obesity

- Older adults who reported a physical, cognitive, and/or emotional disability<sup>6</sup> had particularly high fall rates, with an estimated 52.1% reporting having fallen and 48.9% reporting fall-related injuries in the past 12 months.

**FIGURE 6.** Self-Reported Falls and Fall Injuries in the Past 12 Months, Ages 65 and Older—Indiana, 2016



<sup>4</sup>Costs were calculated using the CDC's WISQARS Cost Module application, which provides cost estimates for medical and work loss for injury-related deaths, hospitalizations, and ED visits: <http://www.cdc.gov/injury/wisqars/>

<sup>5</sup>These conditions are statistically significant at the (P<.05 level). However, causality shouldn't be assumed. Selected chronic health conditions: respondents reported "Yes" to **EVER** having been diagnosed with: diabetes; asthma; stroke; cancer; depression; COPD; coronary artery disease (CAD)/angina; **or** myocardial infarction. Poor mental health includes persons who reported experiencing 14+ days of poor mental health in the past month. Respondents are asked their height and weight to calculate BMI. Obesity is defined as a BMI greater than or equal to 30.0. Exercise is defined as respondents reporting "No" to **ANY** leisure-time physical activity.

<sup>6</sup>Disability is defined as having one or more of the following conditions for at least one year: difficulty concentrating, remembering, or making discussions because of a physical, mental, or emotional condition; or difficulty doing errands alone because of a physical, mental, or emotional condition.

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### FALL PREVENTION RESOURCES

- **Stopping Elderly Accidents Deaths and Injuries (STEADI):** The Centers for Disease Control and Prevention (CDC) is working to make fall prevention a routine part of clinical care. STEADI uses established clinical guidelines and effective strategies to help primary care providers address their older patients' fall risks and identify modifiable risk factors: [www.cdc.gov/steady](http://www.cdc.gov/steady).
- **Stepping On** is a high-level, evidence-based program proven to reduce falls and build confidence in older adults. Stepping On is a seven-week (once-a-week) intervention proven to decrease the incidence of falls in older adults. Older adults practice balance and strength exercises and learn the role that vision, medication, and footwear can play in falls. They also learn strategies for avoiding or eliminating fall hazards to better navigate inside and outside the home.
- **Indiana Fall Prevention Coalition (INFPC)**'s mission is to promote evidence-based fall prevention programs throughout Indiana, increase statewide collaboration around fall prevention in Indiana, promote fall prevention as a public health priority in Indiana, and build infrastructure and sustainability for fall prevention.

### PREVENTION ACTIVITIES IN INDIANA

The ISDH Division of Trauma and Injury Prevention has identified older adult fall prevention as a priority area for intervention and prevention strategies. The STEADI toolkit is a CDC educational material that helps identify patients' risks of falling and intervention strategies for primary care physicians at a wellness visit. The goal is to find the best environment for fall prevention strategies highlighted in the toolkit so that more individuals can be screened and directed to the appropriate channels. Stepping On is an evidence-based program implemented in 2018 to help older adults learn how they can prevent future falls. INFPC promotes programs like these for fall prevention throughout Indiana. With innovative strategies like these, ISDH hopes to decrease the incidence of falls in older adults.

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### DATA SOURCES and DEFINITIONS

**Data notes:** All data in this report are based on the CDC injury definition, whereby injury cases are based on ICD-10 underlying cause codes (deaths), ICD-9-CM external cause codes (hospitalizations before 2015), both ICD-9-CM and ICD-10-CM external cause codes (hospitalizations of 2015), or ICD-10-CM external cause codes (hospitalizations and ED visits of 2016). All data in this report are based on the calendar years. All injuries are considered unintentional unless otherwise specified. Reference to any commercial entity, product, or service on this page should not be construed as an endorsement.

#### Report prepared according to:

Hume BC, Johnson RL, Thomas KE. State Special Emphasis Report: Instructions for Data on Fall Injuries among Older Adults. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2015.

**Data sources:** Indiana State Department of Health, CDC WISQARS. Document prepared by ISDH Division of Trauma and Injury Prevention.